

Remarks

The Office action mailed May 13, 2008, has been reviewed and carefully considered. Claims 12, 31, 39 and 121 have been canceled. Claim 20 has been amended for further clarification. Entry of these amendments is respectfully requested.

35 U.S.C. 112 Rejections

Claims 2-3 and 21-22 have been rejected for alleged insufficient antecedent basis for “B-site atoms.” Claims 2-3 and 21-22 were amended in applicants’ February 1, 2008, Amendment to provide proper antecedent basis. The present Office action does not explain why amended claims 2-3 and 21-22 still do not provide antecedent basis. In the absence of any such explanation, it is respectfully submitted that the 35 U.S.C. §112, second paragraph, rejection should be withdrawn.

Claim 38 has been rejected under 35 U.S.C. §112, second paragraph, due to the phrase “a system for utilizing electrical energy produced by said fuel cells.” However, this phrase was deleted from claim 38 in applicants’ February 1, 2008, Amendment. Thus, the 35 U.S.C. §112, second paragraph, rejection of claim 38 should be withdrawn.

Claims 17, 36 and 126 have been rejected under 35 U.S.C. §112, first paragraph, for an alleged lack of written description. However, as explained in applicants’ February 1, 2008, Amendment, claims 17 and 36 were present in the originally filed application. (See MPEP §2163(I)(A) – “There is a strong presumption that an adequate written description of the claimed invention is present when the application is filed.”). Moreover, explicit support for claims 17 and 36 is found in the specification at page 19, lines 4-7. The present Office action does not respond these points raised in applicants February 1, 2008, Amendment. In the absence of any such response, it is respectfully submitted that the 35 U.S.C. §112, first paragraph, rejection of claims 17, 36 and 126 must be withdrawn.

35 U.S.C. §102 Rejection

Claims 1-7, 9-10, 15-16, 18-19, 20, 23-25, 26, 28-29, 34 and 37-39 have been rejected under 35 U.S.C. §102(b) over Forthmann et al. Independent claims 1 and 20 recite that the “copper-substituted ferrite perovskite material is in contact with said electrolyte layer.” The Office action on page 5 asserts that Forthmann et al. discloses a structure in which the “modified lanthanum ferrite perovskite material is in *direct contact* with said zirconium-containing material” of the electrolyte (emphasis added). However, a close review of Forthmann et al. reveals that it does not disclose a structure in which the lanthanum ferrite perovskite material is in contact with the electrolyte.

The purpose of the Forthmann et al. work was to explore coatings for providing contact between the cathode and an *interconnect* rather than contact between the cathode and the electrolyte. As explained on page 149 of Forthmann et al.:

“The planar solid oxide fuel cell (SOFC = solid oxide fuel cell) consists of two porous electrodes and one gas-tight solid electrode. These cells can be stacked at will (fuel cell stack) which being connected to each other through electrically conductive interconnectors whose gas channels supply the cells with fuel gas (on the anode side) or, respectively, air (on the cathode side). A key precondition for high current densities during the operation of the planar solid oxide fuel cell is a good contact between cathode and interconnector. So far, contact coatings made of lanthanum cobaltite . . .”

Forthmann et al. also states on page 149 that contact coatings should “show no or only a negligible chemical interaction with the cathode and the interconnector.” In describing their test structure, Forthmann et al. explain on page 152 that the contact coating material “would be the contact between the interconnector ridges and the cathode.” Forthmann et al. summarizes on page 154 that they developed contact coatings “that have almost the identical expansion coefficient as the cathode and the interconnector.”

The cited passages from Forthmann et al. clearly indicate that the “contact coating” is a material that is applied as a coating to a cathode material (that is different material than the “contact coating”), and that the “contact coating” is located between the cathode and the interconnect. There is no indication in Forthmann et al. the contact coating is located between the cathode and the electrolyte. Thus, the lanthanum perovskite materials described by

Forthmann et al. for the contact coating are not, in fact, in contact with the electrolyte. Hence, the 35 U.S.C. §102(b) rejection must be withdrawn.

35 U.S.C. §103 Rejections

Dependent claims 12, 31 and 121 were rejected for alleged obviousness. This rejection is now moot since these claims have been canceled.

Dependent claims 13, 14, 33, 122 and 123 have been rejected for alleged obviousness in view of Forthmann et al. combined with Badding et al. Badding et al. is relied upon simply for allegedly showing a cathode layer thickness. However, there is nothing in Badding et al. that cures the above-noted fatal deficiency in Forthmann et al. Accordingly, the obviousness rejection of claims 13, 14, 33, 122 and 123 must be withdrawn.

Claims 115-120, 124, 125, 127 and 128 have been rejected for alleged obviousness in view of Forthmann et al. Independent claim 115 specifies that the “conductive cathode layer comprises a copper-substituted lanthanum ferrite perovskite material that includes at least one B-site dopant selected from the group consisting of nickel, cobalt, manganese, aluminum and chromium.” The examiner’s position is that “based on the teachings of manganese, nickel, and cobalt as B-site atoms by Forthmann et al.” one would have been motivated to include manganese, nickel, and cobalt in copper substituted lanthanum ferrite perovskite material. The cathode layer of claim 115 include *both* copper at least one of nickel, cobalt, manganese, aluminum or chromium. There is nothing in Forthmann et al. that would have prompted a person of ordinary skill in the art to include *two* B-site dopants. None of specific compositions disclosed in Forthmann et al. discloses two B-site dopants. There is no reason according to Forthmann et al to include two B-site dopants. Hence, the obviousness rejection of claims 115-120, 124, 125, 127 and 128 must also be withdrawn.

Dependent claims 130-132 have also been rejected for alleged obviousness over Forthmann et al. However, as explained above, Forthmann et al. does not disclose the subject matter of the independent claims. It follows that dependent claims 130-132 are also allowable.

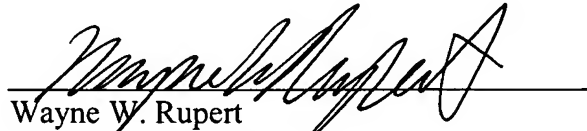
It is respectfully submitted that the application is condition for allowance. Should there be any questions regarding this application, examiner Lewis is invited to contact the undersigned attorney at the telephone number shown below.

Respectfully submitted,

KLARQUIST SPARKMAN, LLP

One World Trade Center, Suite 1600
121 S.W. Salmon Street
Portland, Oregon 97204
Telephone: (503) 595-5300
Facsimile: (503) 595-5301

By


Wayne W. Rupert
Registration No. 34,420